

Anaemia is a common complication of chemotherapy. Since anaemia can lead to different symptoms, such as fatigue, respiratory distress and chest pain, thereby diminishing physical capacity and quality of life, it is generally accepted that anaemia should be corrected. Treatment options include red blood cell transfusion (RBCT), erythropoietin (EPO) administration or a combination of both. **OBJECTIVE:** Our objective was to carry out a cost-effectiveness analysis of treatment with EPO (erythropoietin alpha) compared to traditional treatment with RBCT for patients with chemotherapy-induced anaemia in Sweden from a hospital perspective. **METHOD:** We developed a model for Swedish treatment practice (patient characteristics, response rates, and RBC transfusion data taken from Swedish observational data), and Swedish unit costs, based on a model commissioned by the National Institute of Clinical Excellence, UK. Incremental costs associated with EPO treatment compared to treatment with RBCT, were estimated. Different cancer types and populations were modelled by varying initial Hb, response and mortality rates. **RESULTS:** The model results on costs correspond well to real world data from three big hospitals in Sweden. Average costs per patient are SEK34,900 for EPO and SEK 12,400 for RBCT. The cost per QALY gained from administration of EPO assuming a survival benefit attributable to EPO treatment was estimated at SEK 120,000. The survival benefit from EPO is debated, and has a major impact of the results. Excluding this benefit gives an estimated cost of SEK 365,000 per QALY. EPO treatment is most cost-effective in patients with initial Hb of 9–10 g/dl. The cost-effectiveness-ratio is also moderately sensitive to changes in the response rate to EPO, baseline mortality, the cost of EPO and the estimated QALY gain from EPO administration. **CONCLUSION:** The estimated cost per QALY falls well within the range acceptable in Sweden. The cost-effectiveness of EPO varies between different cancer populations.

PCN47

COUNTY LEVEL INEQUALITIES IN THE ATTENDANCE OF THE HUNGARIAN ORGANIZED NATIONWIDE CERVICAL CANCER SCREENING PROGRAMME

Bonczi¹, Sebestyén A¹, Döbrösy L², Budai A², Betlehem J³, Ember I³
¹National Health Insurance Fund Administration (OEP), Budapest, Hungary, ²National Public Health and Medical Officers Service (ÁNTSZ), Budapest, Hungary, ³University of Pécs, Pécs, Hungary

OBJECTIVES: Organized nationwide screening programme for cervical cancer was introduced in Hungary in 2003. Women between the ages 25–65 are invited by a personal letter and a 3 years screening interval has been applied. Before the implementation of organized screening programme there was an opportunistic screening. The aim of this study is to analyse the three year screening rate (attendance or coverage) of the organized programme according to counties. **METHODS:** The data derive from the financial database of the National Health Insurance Fund Administration (OEP) of Hungary covering the period of 2000–2005. We calculated the three-year screening rate of two periods: 2000–2002 without and 2003–2005 with organized screening programme for women aged 25–64. Screening is defined with cytological examination of Papanicolaou smear and includes all smears taken either within or outside of the organized programme. **RESULTS:** The age specific screening rate of women aged 25–64 years increased from 48, 45% in 2000–2002 without organized screening programme to 52, 65% in 2003–2005 following the introduction of organized screening programme. There were significant differences in the screening rate (attendance or coverage) among counties with the highest values in county Baranya (58, 59%), Tolna (55, 35%), Borsod-

Abaúj-Zemplén (54, 61%) and the lowest values in county Jász-Nagykun-Szolnok (40, 06%), Vas (41, 47%), Veszprém (42, 52%). From 2000–2002 to 2003–2005 we found the largest increase in the following counties: Veszprém (14.35 percent point), Borsod-Abaúj-Zemplén (7.69 percent point), Békés (5.46 percent point). The gap between the counties with the highest and lowest screening rate decreased. **CONCLUSIONS:** We found significant differences in the screening rate among counties, which should be reduced. However, the introduction of organized cervical screening programme lead to closing up the between county differences.

PCN48

A MODEL FOR PROJECTING BOWEL CANCER INCIDENCE AND MORTALITY: APPLICATION TO THE UK BOWEL CANCER SCREENING PROGRAM

Muston D¹, Howard PA¹, Lee DW²

¹Heron Evidence Development Ltd, Letchworth, Herts, UK, ²GE Healthcare, Waukesha, WI, USA

OBJECTIVES: To develop a simulation model for estimating the future impact on deaths and new bowel cancer registrations under alternative bowel cancer screening programme implementation and design strategies. **METHODS:** The UK began phasing in a faecal occult blood test (FOBT) bowel cancer screening programme for all persons aged 60–69 in April 2006. We fitted a novel Bayesian autoregressive age-period-cohort model (Bray 2002) to bowel cancer incidence and mortality data in England 1993–2003/4 (ONS/GAD 2005) that uses parameters efficiently and provides credible intervals for assessing projection uncertainty. We then used the model with results taken from separate cohort-based bowel cancer natural history modelling (Tappenden 2004) and government age- and gender-specific population projections to estimate bowel cancer incidence and mortality for 2003–2016 under various bowel cancer screening program design and implementation strategies. **RESULTS:** The model fit the data well. We estimate that phased implementation of the UK bowel screening program will result in 2440 undetected cancers (95% CI 808–10,160) and 244 (95% CI 114–610) additional bowel cancer deaths in 2006–8. Further, a programme combining FOBT with flexible sigmoidoscopy would detect an estimated 737 (95% CI 207–3917) more bowel cancers and prevent 389 (95% CI 156–1168) more deaths than FOBT alone. **CONCLUSIONS:** This model provides a valuable tool for generating point and interval estimates of the long-term population impact of alternative bowel cancer screening program implementation and design strategies, and can be updated as new information arises. Projection uncertainty arises from the model itself and the disease natural history information used to inform it.

PCN49

FACTORS INFLUENCING INEQUITABLE ACCESS TO RADIATION THERAPY: THE CASE STUDY OF CANCER PATIENTS IN THAILAND

Prakongsai P¹, Chunharas S², Tangcharoensathien V¹

¹International Health Policy Program—Thailand, Nonthaburi, Thailand,

²National Health Foundation, Bangkok, Thailand

OBJECTIVES: To describe factors influencing inequitable access to radiation therapy among cancer patients in Thailand by exploring the current situation and problems of both demand and supply sides after implementation of the policy on universal coverage. The study aimed to improve efficiency in health resource allocation and equitable access to expensive health services by using radiation therapy as the case study. **METHODS:**

Both quantitative and qualitative approaches were employed. A census of 25 radiation therapy units (both public and private facilities) and 72 radiation therapists around the country were carried out. Semi-structured interviews with 1500 sampled cancer patients and in-depth interviews with 12 purposively selected radiation therapists were conducted. **RESULTS:** Lacking of vital human resources, both radiation therapists and medical physicists, is a serious and urgent problem of the radiation therapy services under the Ministry of Public Health (MOPH). There was no public facility under MOPH passing the minimum standard in terms of the appropriate amount of radiation therapists, whilst only 20% of them passed the minimum standard for medical physicists. Mal-distribution of radiation therapy facilities favoring Bangkok and big cities, inability to pay for traveling costs and lacking of health insurance among poor cancer patients were crucial factors influencing equitable access to radiation therapy services. Interviews from radiation therapists support that there is an urgent need to solve the shortage of human resources for radiation therapy services and improve the quality of care. **CONCLUSIONS:** Factors of both demand and supply sides influence the problems of inequitable access to radiation therapy in Thailand. The removal of financial barriers under universal coverage can not solely solve the problem of inequitable access to such expensive health services. Effective short-term and long-term measures require actively participation and concerted efforts of various stakeholders.

PCN50

BOWEL CANCER SCREENING. BALANCING COST-EFFECTIVENESS AND AFFORDABILITY

Howard PA¹, Muston D¹, Lee DW²

¹Heron Evidence Development Ltd, Letchworth, Herts, UK, ²GE Healthcare, Waukesha, WI, USA

OBJECTIVE: To estimate the short-term impact of adopting the UK bowel cancer screening programme on cost and outcomes. **METHODS:** The UK National Health Service (NHS) recently announced a bowel cancer screening programme consisting of biennial faecal occult blood testing (FOBT) to be phased in starting April 2006 (25% of the potential population screened in years 1 and 2 and 50% in year 3). Selection of this screening strategy was based on an independent economic evaluation (Tappenden 2004) that ranked it fourth out of five alternative strategies in terms of cost effectiveness. We fitted a Bayesian autoregressive age-period-cohort model to data of bowel cancer incidence in the UK 1993–2004/5 to estimate the cost savings and impact on outcomes resulting from phased implementation, and from choosing a less expensive, less cost-effective screening programme. UK costings were derived from the previous Tappenden 2004 analysis. **RESULTS:** We estimate that in the period 2006–2009, phased implementation of the chosen biennial FOBT programme will save GBP146 million compared to full implementation, but will also result in 2440 fewer bowel cancer cases detected. Adoption of the most cost-effective screening strategy would increase the number of cancers detected by 737, and would cost GBP1.49 million less to implement than the chosen option at the governmental phased rates in this three-year period. When compared to no screening, it costs GBP23,679 to detect a bowel cancer case using biennial FOBT in the age group 60–69. In the same age group, using the more cost effective strategy of FSIG plus biennial FOBT it costs GBP18,534 to detect a bowel cancer case. **CONCLUSION:** Affordability and service impact appeared to be more important factors than cost effectiveness in selecting a bowel cancer-screening program for the UK.

PCN51

PHYSICIAN AND PATIENT CHARACTERISTICS ASSOCIATED WITH OUTPATIENT BREAST CANCER SCREENING RECOMMENDATIONS: ANALYSIS OF US OUTPATIENT DATA 1996–2004

Balkrishnan R, Bhosle MJ

The Ohio State University College of Pharmacy, Columbus, OH, USA

OBJECTIVE: The primary goal of breast cancer screening tests is to find cancer at an early stage before a person has any symptoms. Evidence suggests that screening examinations such as mammography and clinical breast examinations (CBE) are effective in early detection of breast cancer. Physician recommendation is an important reason many women undergo screening. This study examined the physician and patients related factors associated with physician recommendations for breast cancer screening in the United States (US) outpatient settings. **METHODS:** This cross-sectional study used data from the National Ambulatory Medical Care Survey (NACMS) from 1996–2004. Women aged ≥ 40 years were included in the study sample. Multivariate logistic regression analyses were used to study the objectives. **RESULTS:** Weighted analysis indicated that physicians performed 198 million CBEs and made 110 million mammography recommendations over the study period (1996–2004). Patients' age, duration of visits, history of previous breast cancer diagnosis, and source of insurance were significant predictors of screening recommendations in this population. Obstetricians and gynecologists were more likely to perform a CBE and recommend mammography than other specialty physicians. **CONCLUSIONS:** These findings indicated that there were certain disparities regarding the physician recommendations of breast cancer screening for women in the US outpatient settings.

PCN52

SCREENING RATE IN THE HUNGARIAN ORGANIZED NATIONWIDE CERVICAL CANCER SCREENING PROGRAMME

Boncz I¹, Sebestyén A¹, Döbrössy L², Budai A², Betlehem J³, Ember I³

¹National Health Insurance Fund Administration (OEP), Budapest, Hungary;

²National Public Health and Medical Officers Service

(ÁNTSZ), Budapest, Hungary, ³University of Pécs, Pécs, Hungary

OBJECTIVES: Organized nationwide screening programme for cervical cancer was introduced in Hungary in 2003. Women between the ages 25–65 are invited by a personal letter and a 3 years screening interval has been applied. Before the implementation of organized screening programme there was an opportunistic screening. The aim of this study is to analyse both the annual and three year screening rate (attendance) of the organized programme. **METHODS:** The data derive from the financial database of the National Health Insurance Fund Administration (OEP) of Hungary covering the period of 2000–2005. First we calculated the annual screening rate than we compared the three-year screening rate of two periods: 2000–2002 without and 2003–2005 with organized screening programme. Screening is defined with cytological examination of Papanicolaou smear and includes all smears taken either within or outside of the organized programme. **RESULTS:** The annual screening rate of women for all age groups varied between 15.5% and 16.8% during the 6 years between 2000–2005. The age specific screening rate of women aged 25–64 years varied between 21.8% and 24.3% between 2000–2005. The three-year screening rate of women for all age groups was 31.4% in 2000–2002 and 32.9% in 2003–2005. The age specific screening rate of women in the target population aged 25–64 years increased from 48, 45% in 2000–2002 without organized screening programme to 52, 65% in 2003–2005 following the